

**Amendments to the Specification are as follows:**

Please amend the paragraph on page 1, lines 7-21 as follows:

Illumination device such as a frontlight and a backlight used for liquid crystal display device basically include a light guide plate and a light source disposed on the side section of the light guide plate. Light incident from the side sections of the light guide plates is reflected by a prism formed on the opposite sides to the emission surfaces of the light guide plates and is emitted from the emission surfaces. As a result, the illumination devices illuminate illuminated objects such as liquid crystal panels. It is suggested that the traveling direction of the light incident on the liquid crystal panels be controlled and that display brightness be improved by disposing prism sheets between the light guide plates and the liquid crystal panels (for example, Patent Document 1).

Please amend the paragraph beginning on page 1, line 22 and ending on page 2, line 8 as follows:

Fig. 15 illustrates an example of a section of a liquid crystal display device having the above structure. The liquid crystal display device illustrated in Fig. 15 includes a liquid crystal panel 110 and a backlight 120 disposed in the rear side of (below the liquid crystal panel in Figure 15) the liquid crystal panel 110. The liquid crystal panel 110 is transmissive type with no reflection layer or transfective type with a reflection layer partially disposed in a pixel region. In the backlight 120, reference numerals 122 and 123 denote a light guide plate and a cold cathode fluorescence lamp. A plurality of grooves 124 having wedge-shaped sections are formed at a lower surface 122b of the light guide plate 122. A light scattering plate 126 and two prism sheets 127 are arranged between the light guide plate 122 and the liquid crystal panel 110.

Please amend the paragraph beginning on page 2, line 25 and ending on page 3, line 15 as follows:

The structure of the backlight 120 illustrated in Fig. 15 is currently and commonly used. However, in such a kind of backlight, a large amount of components emitted at an angle so as to deviate from the direction

perpendicular to the light guide plate 122 is included in the light emitted from the light guide plate 122 to the liquid crystal panel 110. Therefore, there is a problem in that the utilization efficiency of the light emitted from the backlight 120 decreases. In order to solve the above problem, the prism sheets 127 for directing the light emitted from the backlight 120 toward the direction perpendicular to the light guide plate are arranged between the light guide plate 122 and the liquid crystal panel 110. However, in a structure where a plurality of optical devices is laminated, it is difficult to make the liquid crystal display device light. Also, the manufacturing cost increases due to an increase in the number of parts of liquid crystal display device. In particular, the prism sheet is extremely expensive, which is a factor for increasing the price of the conventional backlight systems.

Please amend the paragraph on page 3, lines 24-27 as follows:

Accordingly, in order to solve the above problems, it is an object of the present invention to provide an illumination device capable of being manufactured at small expenses and of being easily made ~~light~~lightweight, thereby not creating loss of light.

Please amend the paragraph on page 14, lines 8-17 as follows:

As illustrated in Fig. 4, one side (the rear side in Figure) of the light guider 17 is an emission surface 17b. The side opposite to the emission surface 17b is curved. A plurality of grooves 18 with wedge-shaped sections is formed along the curved surface so as to extend to the peripheral direction of the light guider. As illustrated in Fig. 4, the grooves 18 are formed shallow to have the wide pitch ~~7~~ in the section 17a where the light emitting element is disposed and are formed deeper to have a narrower pitch from the section 17a toward the direction where the light guider extends.

Please amend the paragraph on page 18, lines 2-14 as follows:

In the present example of shape, in particular, it is very important that the distribution of the tilt angles inside the concave portion 14 is in the range of  $-18^{\circ}$  to  $+18^{\circ}$  and that the pitch between the adjacent concave portions 14 is randomly set for all of the directions of a plane. If the pitch between the adjacent concave portions 14 has regularity, interference color of light is

generated thereby to ~~dyecolor the~~ reflected light. When the distribution of the tilt angles inside the concave portion 14 exceeds the range of  $-18^{\circ}$  to  $+18^{\circ}$ , the diffusion angle of the reflected light is too large. Therefore, reflection intensity deteriorates and images cannot be displayed with high brightness. (The diffusion angle of the reflection angle is  $55^{\circ}$  or more in the air.)

Please amend the paragraph on page 18, lines 15-20 as follows:

When the depth of the concave portion 14 is less than  $0.1\ \mu\text{m}$ , it cannot obtain ~~ana~~ large enough light diffusion effect by forming the concave portion in the reflection surface. When the depth of the concave portion 14 is larger than  $3\ \mu\text{m}$ , the pitch must be made large in order to obtain the enough light diffusion effect, which may cause moiré fringes.

Please amend the paragraph beginning on page 29, line 24 and ending on page 30, line 16 as follows:

For example, the prism sheet for controlling the directivity of the light reflected to the reflection surface 12b of the planar illuminator 12 can be used as the optical means 30 illustrated in Figs. 1 and 2. Fig. 5 is a perspective view of a prism sheet that is suitable for the optical means 30 according to the present embodiment. In the prism sheet 31 illustrated in Fig. 5, quadrangular pyramid-shaped protrusions 32 are arranged on an upper surface in Figure. The prism sheet 31 changes the main traveling direction of the light incident from a lower surface thereby to condense the light to the direction perpendicular to the prism sheet 31. When the prism sheet 31 is included as the optical means 30, it is possible to condense the light emitted from the backlight 10 to the direction perpendicular to the liquid crystal panel 20 and make the light incident on the liquid crystal panel 20 by the optical means 30. Therefore, it is possible to provide a liquid crystal display device ~~wherein its the~~ with an increased brightness ~~can be improved in the front direction of the liquid crystal panel 20, where a user is commonly positioned, and its displaying images can have substantially with high~~ higher brightness.

Please amend the paragraph beginning on page 31, line 26 and ending on page 32, line 8 as follows:

The liquid crystal panel 20 has a structure where a liquid crystal layer 23 is interposed between an upper substrate 21 and a lower substrate arranged to face each other and the liquid crystal layer 23 is sealed by a sealant 24 disposed along the internal ~~circumstances~~circumferences of the substrates 21 and 22 in the form of a planar frame. A liquid crystal control layer 26 is formed on the internal surface of the upper substrate 21 (on the side of the lower substrate 22). A liquid crystal control layer 28 is formed on the internal surface of the lower substrate 22 (on the side of the upper substrate 21).

Please amend the Abstract of the Disclosure as follows:

#### ABSTRACT OF THE DISCLOSURE

~~It is an object to provide an illumination device capable of being manufactured at low expenses and being easily made thin and light. The~~An illumination device includes a light source portion (a light source) 13 and a planar illuminator 12 for emitting light of the light source portion 13 from one surface thereby to illuminate a liquid crystal panel (an illuminated object) 20. The planar illuminator 12 has a reflection surface 12b, on which minute concavo-convex shapes are substantially randomly formed. Surface emission is performed by diffuse reflecting the light irradiated from the light source portion 13 by the reflection surface 12b.